

Name \_\_\_\_\_

## STUDY GUIDE Chapter 11: Genetics

### BE SURE TO REVIEW YOUR GENETICS PROBLEMS AS WELL!

1. Genetics is the study of \_\_\_\_\_, which is the biological inheritance of traits. The “father of genetics” was \_\_\_\_\_, as he demonstrated the inheritance of certain traits in pea plants.
2. The unit by which hereditary characteristics are transmitted from parent to offspring is a \_\_\_\_\_. Various forms of a gene are called \_\_\_\_\_. The \_\_\_\_\_ allele is expressed when present in one copy, while the \_\_\_\_\_ allele’s expression can be masked by another allele.
3. \_\_\_\_\_ individuals have 2 different alleles of a gene while \_\_\_\_\_ individuals have 2 identical alleles of a gene. The allele combination in an individual that causes particular traits or disorders is called its \_\_\_\_\_ and the expression of a gene in traits or symptoms is its \_\_\_\_\_.
4. A monohybrid cross results in a phenotypic ratio of \_\_\_\_\_ while a dihybrid cross results in a phenotypic ratio of \_\_\_\_\_.
5. Mendel’s law of \_\_\_\_\_ states that the alleles of a gene are distributed into separate gametes during \_\_\_\_\_. Mendel’s law of \_\_\_\_\_ states that the inheritance of a gene on one chromosome \_\_\_\_\_ influence the inheritance of a gene on a different chromosome.
6. Inheritance in which both alleles are fully expressed is called \_\_\_\_\_. Inheritance where neither allele is dominant, resulting in a “blending” of alleles, is called \_\_\_\_\_. Inheritance in which a gene has more than 2 **alleles** is classified as having \_\_\_\_\_. A trait controlled by 2 or more **genes** is considered \_\_\_\_\_.
7. Y-linked traits are rare and are passed from \_\_\_\_\_ to \_\_\_\_\_. There is NO male to male transmission in \_\_\_\_\_ linked traits.
8. In autosomal dominant inheritance, \_\_\_\_\_ autosomal allele causes a phenotype. It can affect \_\_\_\_\_ and \_\_\_\_\_ and does not skip generations. An example of a disease/disorder caused by autosomal dominant inheritance is \_\_\_\_\_.
9. In autosomal recessive inheritance, \_\_\_\_\_ autosomal alleles are required to cause a phenotype. It can affect \_\_\_\_\_ and \_\_\_\_\_ and can skip generations through \_\_\_\_\_. Autosomal recessive disorders tend to be more severe and produce symptoms earlier in life than autosomal dominant disorders. An example of a disease/disorder caused by autosomal recessive inheritance is \_\_\_\_\_.
10. X-linked dominant inheritance is much more severe in \_\_\_\_\_. It is passed from the male to all \_\_\_\_\_ but to no \_\_\_\_\_. In X-linked recessive inheritance, males only need \_\_\_\_\_ recessive allele to express the trait while females need \_\_\_\_\_. Sons inherit the trait from an affected or heterozygous \_\_\_\_\_. Daughters who inherit the trait must have an affected \_\_\_\_\_.

11. A Barr body is an inactive \_\_\_\_\_ chromosome. A female carrier of an X-linked recessive gene who expresses the phenotype because the normal allele is inactivated in some tissues is called a/an \_\_\_\_\_.

12. Explain why all calico cats are female.

13. What is the difference between sex-limited and sex-influenced traits?

14. Give an example of a sex-influenced trait.

15. Give 2 examples of sex-limited traits.